ANT/TRA/10

TRAI[illegible] ENDERBY LAND.

1965

(Taylor)

ENDERBY LAND

1965.

ZIVAR – V

ZIVIT – M.

Beck, Bradley, Tryon(?), McGhee - G.L. Ass.

[illegible]

1st [illegible] on [illegible] of [illegible].
on [illegible] [illegible] & [illegible] st[illegible].
[illegible] [illegible] [illegible] [illegible] for [illegible]

2nd [illegible] [illegible] about Copper Mt.

3rd [illegible] [illegible] or
[illegible] [illegible]

4th [illegible] [illegible] [illegible]

5th of [illegible], copper production.
[illegible]

Summary

[illegible] [illegible] time of [illegible] cycle
2nd [illegible] [illegible] & [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] height.
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]

<u>RADIO.</u>

Ship — Merchant Ship

fishing pots — Aircraft

<u>Record & REPORT</u>.

All chngs in weather
rain, cloud, visibility,
wind speeds & direction!
partic sudden changes.

Party Trail.

2 Ia Moss - 1 ½ each.

2 K

1 Kitbag

2 Knives

3 plates

1 set Billies out 1 handle

1 Butter jar "

1 Box Matches

1 Roll Toilet Paper

1 Roll Paper Towel

1 Nuke Tablets

2 Dishes

1 1 qt Milk Jar

3 Combs

2 sets Knife

1 Tin opener

1 Thermos

6 Ensolite mats

1 Tent Repair Kit 4 Stove Repair Kit

1 large billy

4 Plastic Cups

3 plastic

1 plastic plat

1 Rucsack

2 climbing ropes

1 [illegible]

1 pr [illegible] [illegible] [illegible]

~~[illegible]~~

25' light [illegible] rope

OUTSTANDING

KEROSINE

1 primus

Food

Sleeping bags liners &
covers.

KITBAG TRAIL (1)

Spare clothing

1 pr Mukluk inners
1 sweater
1 Balaclava
2 pr. W'weight sox
1 unit [illegible]
1 [illegible]
1 [illegible]

mukluk [illegible]
1 pr. [illegible] gloves
1 pr. inner clothes
1 [illegible]
[illegible]

1 Kit tent & tent repair
1 Housewife.
1 Medical Kit
2 Sleeping Bags
1 [illegible]
1 Pr tent slippers
3 [illegible] Mats

KITBAG TR (2)

2 x [illegible] KEPT.

TR 12 contd.

1 Stove

3 Billies

4 cups

2 plastic containers

4 plates

1 [illegible]

2 k/f/s set

1 paper towel

1 toilet paper

1 [illegible] jar

3 candles

2 [illegible] - 11 [illegible]

1 white [illegible]

~~1 head torch~~

1 TIN BISCUITS

12 bars chocolate.

1 Rucsack, light brown. (3)

1 Pr Pr[illegible] [illegible]
2 [illegible] [illegible]
[illegible] ; [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] pitons, [illegible], [illegible]

2 Climbing Ropes.
1 [illegible] [illegible] (Trail.
1 [illegible] knife.

1 Rucsack [illegible] [illegible] (4)

[illegible] [illegible]
Thermos flask
film . Camera
1 [illegible] w. battery
1 [illegible] (5)

2 Ice axes
1 Spade

contd.

1 Ration Pack (6) ∞

1 Ration Pack (7).

1 Kitbag Label - 8

1 Kitbag Radio - 9

1 Pyramid Tent - 10.

2,500' Mean T. Jan is −4.9°C
@ 4000' " " " −8 6°c
5500 " " −11.6°c
2500 Feb −7 9°c
4000 " " " −11.2°c
5500 " " " −14.2°c

Mawson highest Max, Jan +45°F
" " " Feb +43.3°F

CLOUD at Mawson
Mean cloud at Mawson, summer 5/8
" " autumn, winter 4/8
" " " Spring 5/8
Summer 40% overcast days

Approach of 'standing jump' of drift snow or wall of snow marks katabatic.

OBS
6 hrly.
0600, 1200, 1800, + if possible 2400

0600 is most important because of Weather Radio - thro' Antarctica

6

MUST KNOW

- Wind Speed & Direction
- Visibility ✓ & general conditions
- Type & Height of Cloud
- Drift & Whiteout, falling Snow
- Also desirable
- Temperature
- Drifting snow

Q.N.H. – landing pressure for Aircraft.
Q.. when affecting helicopter

watch weather continuously
& report to pilot & ship.

If Looking downslope see
series of lenticular clouds
means in lee of mt. standing wave activity
extremely dangerous to aviation

w - strong updrafts & downdraft
Puffy cloud downhill of
nutks.

Pilot - must be able to
see - no whiteout, no drift - &
must have reasonable wind speed.

~~070~~
2115 to 2130
& if not
0700 to 0730

contact ships or
Mawson

Friday 21 Oct. — Tuesday 1955

Kidson I. has a
flat top at about
the height of the Campbell
Is. platform? — No; prob.
coral lance.

Campbell Id. compilation
that corresponds roughly to
height of Bryul Head —
Norm. I. bench.

But C. Brecca c [illegible] not
irregular but continuously
sloping, not stepped.

Unusual [illegible] at C. Bon[illegible]

on horizontally at abt
~ 200 ft (= Campbell Hd

Gneiss Is all here
like specimen took yesterday – like
others, but (grey-pink
changeable, but greenish
black.

"Old Turtle Gneiss" extension
divides island to low T
inside to west, & island east
is reddish grey gneiss,
reminiscent of C. Bear type
rocks

Island to east as before
& more massive, possibly
granite with but
light at very low tide,
looking massive & dark at 6 a.m.

& mainland to east of Mon I. has discrete (lens) bodies of red granite
intruding dark gneiss – as at Mon I.

ANT 41 / Run 17 ~~7~~2201 L

Small Pke ... ... of

pt Stump Mt. ~~C~~ 11 g.

(I21) 5 fin. gr. granular

... ... w/ yellow

... & ... ...

... xls, some ... gr.

... m. g. ~~...~~

... ... nearby

... m. gr. quartz

feldspar & ...

~~Bm~~ I1 is a ...

... ...

... by ... ~~...~~

... ... of

... 1" to 5 feet

... ... 55° ...

... 70-80° S.E.

11

[illegible]

The pegmatites [illegible]

[illegible]

The [illegible]

The [illegible] are from 1 mm to
10 mm in [illegible]
50 mm [illegible] 300 mm [illegible]
They have a dominant trend
of 160° NE. dip 60-70 E.
[illegible]

pegmatite [illegible]

U/I [illegible] unit has be.
prominent foliation at
[illegible] 200' & has [illegible]
light grey rock [illegible] of
[illegible] [illegible]

V. little [illegible] in
[illegible] & [illegible] 200'
[illegible] - All [illegible] [illegible] ?

An ill-defined lens in the
granulite is a fairly well foliated
rock w. long (6 inch × 5-10 mm)
stringy [illegible] lens, & a
[illegible] ~~[illegible]~~ flecked [illegible]
& white appearance, though
it grades into the dark brown
granulite. Lens abt 3' × 9".
m.g. to c.s. gr.

Pt T/2 rocks as above, even
trend, but one irreg lens
blue quartz, 3 ft × 3 ins.

concord w. pegmatite. Parts of
the pegmatite are {co. gr. granite (biotite)
w. no clear foliation but cut by
nebulite veins. Dk. min prob.
pyroxene. Grain size of
pegmatite band varies m.g. mostly co. gr.,
some pegmatitic.

At Pt. T 2 ~~pegmatites~~ is more
discordance in pegmatite, 'jumps'
from concord. band to concord
band. The thickness of a
band varies from 2" to 2' e.g.
+ they are rarely continuous for
more than 30-50', they are
commonly cross-cut to the
band to produce thicker
band — a network of semiconcord
+ concord. strips in the ~~granulite~~
nebulitic granulite and
all cut by nebulite.

On the main N.E. face of Pt 2
the country rock is a m.g. even grained
gneiss dark grey with a ~~good~~ fair
foliation composed of stringers f.g. to
m.g. dk mineral in a m.g. even gr. matrix

of quartz & feldspar.

V. like the hypers - quartz - feldspar gneiss of Stanton Pt. & Bird Head - but the foliation here is the foliation str 160°/70° to E - the foliation of the mylonite above & ~~not~~ of the faint trend pointed out by MCL. & NOT the ~~foliation of~~ ~~the~~ direction of the pegmatite network which broadly continues to str. 55° NE.

[illegible] iron on this face

thin bands & irreg. lenses ½" - 6"

w. reconstruct shapes

of [illegible] [illegible] qr. pegmatite material

light grey quartz - feldspar rock interbedded w. thicker beds 8" - 8" of well foliated [illegible] [illegible] [illegible]

Apparent [illegible] [illegible] - [illegible]
[illegible] in [illegible] Stratum [illegible]
[illegible] [illegible] [illegible] [illegible]).
& the small patch [illegible] is
~~[illegible] [illegible] [illegible]~~ (2")
or in [illegible] this [illegible] of [illegible]
so called [illegible]
[illegible] of [illegible]
[illegible] seen [illegible].
lower down the [illegible] side (rather
than face) of [illegible].
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]

In [illegible]

[illegible] [illegible] [illegible]
of m. g. [illegible]

[illegible] foliated [illegible] of m. g. [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
The foliation caused by [illegible] stage [illegible]
[illegible] & by [illegible] [illegible] [illegible]
5 [illegible]

[illegible] rocks are feldsp-[illegible] -
feldsp. [illegible] [illegible] [illegible] pegm.
in gneiss to pink [illegible] [illegible]
& [illegible] has been [illegible].
& little [illegible]

T 3 As above, [illegible]
dark gray [illegible] gneiss &
lt. yellow-brown coarse quartz feldspar
rock, confined [illegible] bands of dk.
gray rock [illegible] but [illegible]
[illegible] [illegible], & some
bands of fine [illegible], [illegible]
[illegible] with the yellow-brown
[illegible] [illegible] [illegible] 5 [illegible]
[illegible] [illegible] [illegible] ~~[illegible]~~ [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
central 2 ft [illegible] [illegible] [illegible]
a [illegible] feldsp. [illegible] [illegible]
little [illegible] [illegible].

T 4 has a [illegible] rotated
[illegible] [illegible]

+ both ... porosities
noticed ... gneiss
are biotite, ... , intercalary
... 5 mm ... & 5 mm.
→ There are a few garnets
in ... + green
Cal. ... on ... surface of
fault ... brecciated rock.
Plastic deformation ...
but ... folding ...
... .
Some ... across
... ... blocks
... ...
... .
...

T! 6528005K Sample ~~401~~ I L ~~on~~ interbedded
qtz gneiss + ... yellow ...
... .
... typical of all.
The ... are bands in
which biotite is ... —
..., but it is difficult
to distinguish.

Pt. 405 possibly deformed, ~~sheared~~ dark gd. brown (dark gray) ~~dk~~ porph. gneiss & yellow-brown bands & ~~migr~~ lenses, pegmatite & coarse qtz. ~~rock~~ qtz.-feldspar rock all str. <u>120°</u>, d. 60° NE

cut by zone of mylonite or black flinty rock rock <u>10'</u> thick, str 120°/60°E

containing disrupted inset of banded country rock up to 3' x 1'

Specks Cu stain in v.f.g. ~~grn~~ dark gneiss.

At base on S. side of Pt 401 the dark ~~gray~~ rock is foliated by thin bands (1 mm) ~~green~~ ~~qtz~~ of qtz-felds yellow-brown ~~rock~~ feldspar rock, & [illegible] gneiss [illegible]

up to 4' wide -
Strike 60° N / 30° SE
Pt 406 — rising northwards
on Spamp Mt. rocks str. 140°/70° NE.
pinkish yellow brown m. gr. &
lt grey ?pyroxene - quartz - feldspar
rock now dominates & dk grey
green or higher propn. dark coloured
mins forms only up to abt 35%
of exposure (& in some only 20%).
1 slide Garnet is here common
in the lt yellow-brown rock, &
occurs in the dk. grey lenses (continuous
bands of dk grey material are seen
bent or folded out as lenses
- 1 ft to 2 ft long, 1" - 2" thick.
Mylonite continues, & one
concordant lens of ~~bi~~ foliated
~~f~~ dark grey rock is a
biotite - garnet - quartz - feldspar gneiss.

Pt 407 A few small stone circles,
all defined with 1" stones to
angular blocks 6" to 1' across.
Some have good in centre, c.1 lumps

round edges - NOT MORAINE
but more in situ crystal
joint fragment.
- these rocks are very clean
because of ~~[illegible]~~
~~fragments~~ vague boundary
in coarse frags + poorly
quality outcrops.

Also a few stages
of gravel appear to
flow downhill among
small boulder (1'-18")

Only one in a small area
70 ft square where
fragments [illegible] - [illegible]
[illegible] [illegible] [illegible] [illegible] / [illegible]

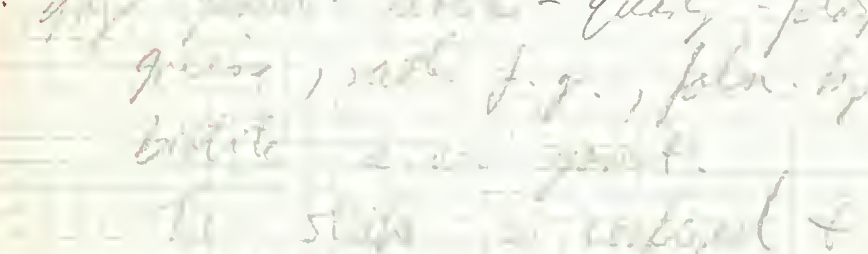
Biotite is more common
+ ~~dark~~ greenish are many;
dark rocks in biotite area.
Also one has [illegible] - [illegible].

9 orth-pyroxene very small grs
+ quartz [illegible] [illegible]

[illegible] in one broad [illegible]
massive mica- quartz
feldspar , [illegible] gr. ~~flesh~~ pink-brown
~~"aplite"~~ layer 20' wide.
foliation confused here
by gentle semi brittle folding:

At west end of belt
lake rocks [illegible] , [illegible]
massive but garnet - quartz -
white feldspar rocks are abundant,
biotite [illegible] garnet [illegible]
+ [illegible] [illegible] less common.
GLACIAL POLISH [illegible]
common on [illegible] rocks.
[illegible] the [illegible] [illegible] [illegible]-
down from ice. The [illegible]
[illegible] horizontal [illegible],
[illegible] roughly N [illegible]
A few bodies of dark gneiss
[illegible] [illegible] orientation, lie in the garnet
rocks

Along the N side of the melt lake
biotite - garnet - bearing massive ~~[illegible]~~
v. crs. gr. & crs.-gr. folia. with
→ 10' & more thick coarser small
lenses & bands ⇒ a sketch of rock
[illegible] garnet - biotite - quartz - feldspar
gneiss, med. f.g., foln. by stronger
biotite and garnet.
The strike is confused & [illegible]
[illegible] but at [illegible] [illegible]
[illegible] of folded [illegible] ~
[illegible] planes, 60° toward 165°M



& this may account
for the swing of strikes between
165° & 200°M.
~~[illegible]~~ [illegible] etc.
[illegible] [illegible] the [illegible] [illegible]
[illegible] - All foln. dips
[illegible]

of strike.

65280055

TR 2 - a sample of the dark biotite bearing lenses above.

65280056

TR 3 - a sample of light garnet - quartz - feldspar rock above.

<u>SAT.</u> 9th January 1964

0600 - weather

<u>Wind</u> 160°, 8 kts, gusty

<u>Visibility</u> 50 miles

<u>Cloud</u> 2/8 Cirrus, 15 000 feet

No drift here but some drift haze ~~over Framnes in direction~~ to ~~over~~ over Framnes Mts

Helicopter did [illegible] take off at 1030. Came up on radio at 1030

8TH JANUARY - DIARY.

0400 rise breakfast & assemble equipment. Weigh & take 150 lbs on one helicopter, me on other.

Left ship about 0500 28
Overcast sky clearing in south,
light S.E. wind. ~~our~~ Long
flight $1\frac{1}{4}$ hrs at 65 knts
to Stump Mt. Excellent view
of Taylor geology from helicopter
landed on snow patch behind
Stump Mt at alt 5.75 with
all fuel gone. Unload + helicopters
leave for ship. Dig tent
~~hole the~~ trench through ice layers
+ erect tent solo, ~~then~~ off
then do some geology before copters
arrive again at 1000 w. I McLeod.
Both geologize near camp + back
to meet copters at 1400 w.
Cook + Wallis. Geology again
to 1700 when copters in again
w. Bob Lockhart, take out
P. Cook. Wind died in afternoon

several pools melt water
among rocks, & saw blue lakes
on main ice-cap - very
scenic & picturesque. When
Bob arrived we all had tea &
biscuits in the tent, then Sam &
Gordon were taken off by copter
at 2000. Bob & I tidied up,
kept radio sked at 2115,
then had a fine supper of meat
bar & trimmings washed down with
tea, then bed abt 2200.
Wind rose to 20 kts over the
0100 in NE, but died away
to 5 to 10 kts ~~abt~~ by 0600.
Since we arrived, I can't
get used to this spring weather.
It's absolutely delightful for
working in, no cold fingers,
no freezing [illegible] along the
face - in fact I got my face
sunburned yesterday, but I
keep starting around in more
clothes than I was wearing at
Alert in $-30°F$.

+ I got the feeling that I
have spent half my life in a
polar pyramid. I woke up
last night certain that I
was still on the interminable
journey from Brock's Base in
the P.C.H. back to Mawson,
but I didn't have Jim & Dave
packed in on either side of me,
so I woke up to this
immediately. But again, the
routine, the stove, the food, the
radio, I can do with my
eyes shut. But one real luxury
is getting LIQUID WATER
out of a pool in the
rocks, about 20 yards from the
~~tent~~ - It saves a lot of
time & ~~they~~ ~~it~~ it means
we can have a drink

any time, instead of having to walk [illegible] 4-1?0'

Sat 4th Jan. cont'd.

ANT 41 / Run 17 / 70212

R? 408. ~~Dark~~ Green, co. gr. mottled pinkish brown + dk grey + dark grey m-gr. [illegible] w. [illegible] feldspar. As before a ?pyroxene - quartz - feldspar gneiss, w. small stripes yellow brown qtz-feldspar [illegible] (5 x 30 mm) + strips dark [illegible] (2 mm x 10 mm) give foliation. Patches, lenses, + bands of each type but these poorly defined

[illegible] lt yellow brown pegmatites are semi-concordant, rel. thin (5 g → 2 ft, ~~[illegible]~~ in typical one 4" thick, ½" each margin is enriched in dark mineral oriented ∥ pegmatite [illegible], ~~[illegible]~~ forms a gradational boundary between pegmatite + country rock. Foliation here str. 160°, vertical.

Pt. 409   7/9/7/L   From here ~~alm~~ all the high ridges & knolls on the east side of Stump Mt. appear to be rather massive dark grey gneiss w. thin pegmatites giving banding & this banding appears to be dominantly E-W on the west side of Howard Bay.

At the outcrop are massive to poorly foliated & well foliated rocks including 1 dark grey & black ? biotite - garnet - pyroxene - quartz - feldspar gneiss - massive in places, garnet commonly forms knots → 5 mm, & a confused foliation is given by irregular lenticles of felsic mineral.

2 garnet - quartz - feldspar gneiss, again rather massive, light grey speckled red

- Augen gneiss ~~outf~~ → 10 feet thick in which augen are

feldspar porphyroblasts with rectangular form - with almost perfect preferred orientation in a f.g. groundmass - poss. w. much biotite

Also pink-brown garnet-pyroxene-quartz-feldspar pegmatites cr & v. cr. gr. and many concordant, but foliation is rather confused. It has a dominant trend 110° dip vertical; but it is cut twisted & ~~[illegible]~~ + broken in an almost brittle fashion by ~~[illegible]~~ [illegible] w. thin mylonites.

On 71992 pts 410

light grey rocks, pinks Q-Q-F gneiss

On 71992

Pt. 410 is on a boundary between rather massive, black and gr. pyrox-feldspar gneiss, which is given a foliation by elongate aggregates 10 mm × 30 mm of m. quartz & feldspar grains

AND light yellow-brown grey

crs gr. garnet - quartz - feldspar
rock. The garnet rocks
are ~~at~~ at least 200' thick
the pyrox rocks at least 400
but their exposure & extension
show that they are much
thicker i.e. Pb. 411, 412, 413
are all black gneiss.

The contact of the is fairly
sharp but partly gradational
within about 3 feet, bands & lenses
of black rock 1" to 6" thick
contain aggregates of garnet up
to 10 mm across, ~~& with~~
these bands & lenses are all deformed (see
[illegible] fold) & lie mostly within
the garnet rock, on the black
side of the contact, ~~top~~ (2') [illegible] &

the bands (4" → approximately 5') of ~~garnet-bearing~~ felsic (light pinkish brown) biotite-quartz-feldspar pegmatite occurs in the dark rock.

Throughout the garnet gneiss there are large rafts → 10' x 4' of black rock, — & this is strikingly similar to the Taylor Glacier exposures.

65280057
TR4 — the black rock
TR5 65280058 — the garnet gneiss
TR6 — the 'biotite pegmatite

~~Overall~~ Strike of above contact over 1 mile is 140°M, dip 80° NE

The S. end of U/SS I is slabby + has a similar massive mostly like the black rock above. — & also has the garnet-bearing [illegible] except for the more [illegible] rock about 100' from the contact

At Pt 413 porous - quartz - feldspar pegmatite → 15' thick within the black gneiss. have large feldspar phenocrysts + int blue? mineral porphyritic charnockite. The black gneiss is charnockitic granitic gneiss

Pt 414 - All rocks NE of this day? the shear are RED - all rocks West of it - e.g. Pt 415. including the entire schist of UGF, are Black - the black gneiss above.

The red rocks are broadly similar to the rocks of the composite - yellow brown pegmatite ~~no~~ + similar rocks w. red feldspar from the bulk of the outcrop.

These rocks are massive but
foliation appears [illegible] in places
- elongation of stringers of dark
mineral, & mainly the majority
of pegmatitic material, but
melanocratic is abundant & most
of the rock has patchy, dispersed
& confused foliation

A typical member ~~has~~ is
a hypersthene-quartz-feldspar rock
m. gr., massive with vague
local stringers of dk mineral concentration
giving an ~~conf~~ impression
of confused foliation
& small garnet xls in places
This grades into thin (3") yellow-brown QF pegmatite
& there are [illegible] [illegible]
long lens-like patches (10 ft by 2 ft)
of m. gr. to c. gr. dark grey
gneiss, like the [illegible] rock
feldspars are yellow, dk min
[illegible] abund.

T 7 is a typical red gneiss

6528 0059

The red gneiss contains
some biotite, kyanite, [illegible]
[illegible] [illegible] in the same
elliptical patches → 10 cm long
by 5 cm broad. (±)

At ridge of Pt 444 most
common foliation // ridge
at 115° M, dip abt vertical.

Col. PHOTO of red gneiss w. [illegible]
[illegible] background

At 3 small pks above
ridge of Pt 444 – red gneiss
~~+1 ash~~ – (+brown gray in
part) & lt yellow-brown
coloured gneiss as before
but better foliation [illegible]
streaks [illegible] [illegible] + [illegible] [illegible]
1" x 1"/

— Str. 100°M / 70° S.

71992 shows distribution of black slabs, porphyries + red sprays w. yellow-brown pegmatites in S.W. corner Howard Bay

There is a striking absence of thick mantle + of large boulders on the hills behind Taylor + on Ufs I. Glacial striae are common + many slabby outcrops have the clean swept appearance of, say, the Skye Cuillins. 'Small' erratics occur here + there, but perhaps only 1 or 2 per 100 sq. yards of rock.

Clean swept rock platforms also occur at 20 - 30 + 200 ft above S.L. behind Ufs I + on S. side of mainland opposite.

Diary for 9th January, [illegible]

~~Radio~~
Wind died away steadily, up at 0630 record weather – fine day, light SE wind, drift haze over Mawson, as usual, but gorgeous morning here.

Radio sched at 0700, couldn't make ourselves heard though our carrier went over strongly. Alan Rose gave us a sharp "expect [illegible] at 10.30" as we couldn't see why a 'copter should come out we were LIVID.

We hoped to get away abt 0900. Had breakfast + packed v. slowly but ready by 0930. Tried to contact ship, no luck, so left note + headed for coast S. of Ufs I. at 1030. Used rope most of way. Snow + white ice all

softened up by melting + much melt water in shallow channels under snow.
Geology confusing at first but got a good line on black gneiss + red gneiss – cf. Norris I in 1961. The wind died completely in the afternoon + the weather was ridiculously warm. At lunch we sat in our pullovers – no windproof – + drank water from a melt pool – we worked over ridge with neither windproofs nor gloves – NONE AT ALL (not just 'pair') + we both got fiercely sunburned.
I was worried about Bob not having ventiles, but in his S/P pant [illegible] he was much more comfortable than I was in my –30 underwear + fully sealed ventile. I finally took my pullover off + I didn't wear gloves ALL DAY. The summer is fabulous. Back at the tent all the peps had melted out, but we froze them

in again, & the 'copter had
built up a dump of 4
½-full drums. So we may
be right for Stefansson Bay.
We counted over <u>100</u> seals
sunning on the ice in
the S.W. corner of Howard Bay,
all having a gorgeous time.
Lichen, green, black, yellow
red, & even a couple of
varieties of moss all blooming
in the damp spots among the
rocks. Summer has really
arrived. Not a breath of wind
all afternoon & evening, we both
nearly dropped getting the
heavy rucksack back up the
hill to the camp, Bob
insisted on carrying it 9/10 of the way.
Back in camp at 2000.

We had a note from Alan Cook saying sorry about the radio — his money — but it wasn't his fault. Very complicated was so. As usual I had periodic attacks of nostalgia — always get them at the beginning of geological fieldwork — then they start moving + I forget it. But this certainly helps you to appreciate home — it's a pity I don't feel like this in London occasionally. (If I did I wouldn't come down here). — Even the rocks were really [illegible] to the [illegible] today + all the best [illegible] out of the snow/.

10/1/65

Wind 160° 5 knots
Visibility 50 miles
Cloud ~~[illegible]~~ Nil
Some drift haze over Framnes Mts

Then we had a look at SE part of Stillwell Hills + are

move the to [illegible].

10/1/65 — Sunday.

"Red" rocks continue round hills west + N. of camp.

They are in fact yellow-brown "pegmatite", w. reddish feldspar in places, + w. a consid. propn black mafic-rich gneiss in large + small frayed out lenses. Mylonite is also abundant, making some exposures quite black. 1 b.w., 1 col. photo of B.Laskal (?) w. mylonite cutting on gr. yellow-brown "pegmatite"s

ANT 41 // Run 17/7199L.

Pt 416.

On the contact between ~~felsic~~ light red-brown

garnet-bearing felsic gneiss to west (T) + black & dark grey ?pyroxene-rich mafic gneiss to east. On photo boundaries are continued from yesterday's work. Ridges of dark grey mafic rocks in the valley curve round ~~in~~ toward the red-brown felsic rocks.

The straight contact along the cliff base at photo pt may be a fault.

The mafic rocks are ? pyroxene-feldspar gneisses - biotite not evident - m. gr. & cs. gr. very well foliated by lenses (from 6" to 10' long & 2" to 2' thick) of m.gr. to cs. gr. yellow-brown feldspar-rich material by ~~lenses~~ similar lenses of rock rich in dark mineral & by ~~thin~~ bands 1" - 2' thick of concordant mylonite much of it enclosing brecciated country rock.

The light red-brown rocks here are unusually uniform m.g. to co. gr. garnet-quartz-feldspar rocks with a faint streaky foliation caused by thin lenses of feldspar (i.e. ~~2~~ ~~50 mm ×~~ 20 mm × 3 mm).

Back up the hill towards the camp the "red rocks" are much more varied containing mafic-rich lenses, & lenses & bands of yellow pegmatite.

65280060

T8 __T8__ the red garnet-quartz-feldspar rock here

T9 __T9__ ~~the~~ a black pyroxene feldspar gneiss here.

= the ~~[illegible]~~ dark gneiss contains in its stability & produced expose

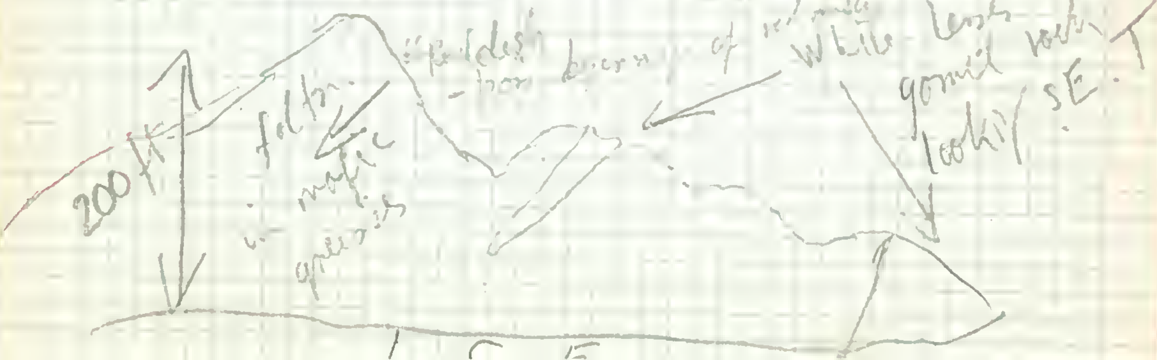
in contrast to the blocky & irregular red gneiss.

The contact between black & red is a 15-ft-wide zone of rubble & flaky, frost shattered rocks – ~~almost~~ 80% of A black gneiss. Outside this zone both rocks are fresh, Their foliations // the zone but the black rocks have lobund concord. mylonite – the red rocks have NO MYLONITE (? or they sheared?)

Foliation in both rocks str. 40° M / 40° SE, ~~but~~ contact has same str. but its dip is steeper & may be reversed (on topography) i.e. 70° NW.

Caution in red & black terminology because of red-weathering pass in "black" rocks (Fe-stained) Term of convenience only. Weathering is perhaps more diagnostic than colour & there are undoubtedly mixed & transitional rocks.

NO T 8 is not a
red rock. It is a garnet
gneiss lens within the
mafic gneiss 100' above
it in the "sequence" is a
similar white lens, 20' thick
by 200' long, concordant
with the 50° dip of the black
gneiss. This makes the red/black
border on the photo much
sharpter. ~~These lenses may~~
Takes out the kinks. These
lenses may be similar to the
garnet gneiss at W. margin of
scarp of David Ra at Coats
& Hordern. ? metasomatic ?



Pt 417 ice-cored moraine mounds in floor of valley here.
largest mound is circular 8-10' high & 50' in diameter w. collapsed centre 10'-20' in diameter, depressed 5' - a large hummock breaking up into smaller hummocks.
Moraine ranges from silt size (on ice under boulders) to bldrs 3' long. Most is 2" - 12", mostly angular, a few sub'angular.

T10 - silty material from the ice.
Photographs of large & small mound here.
Thickness of moraine on ice commonly 2 inches or so ~~deform~~ thicker locally. Steep slopes on side have 1" or less or ~~at~~ ice is exposed in the collapsed central area (the well is ~~[illegible]~~ partly [illegible]

on N. "downstream" side of this.

Pt 418

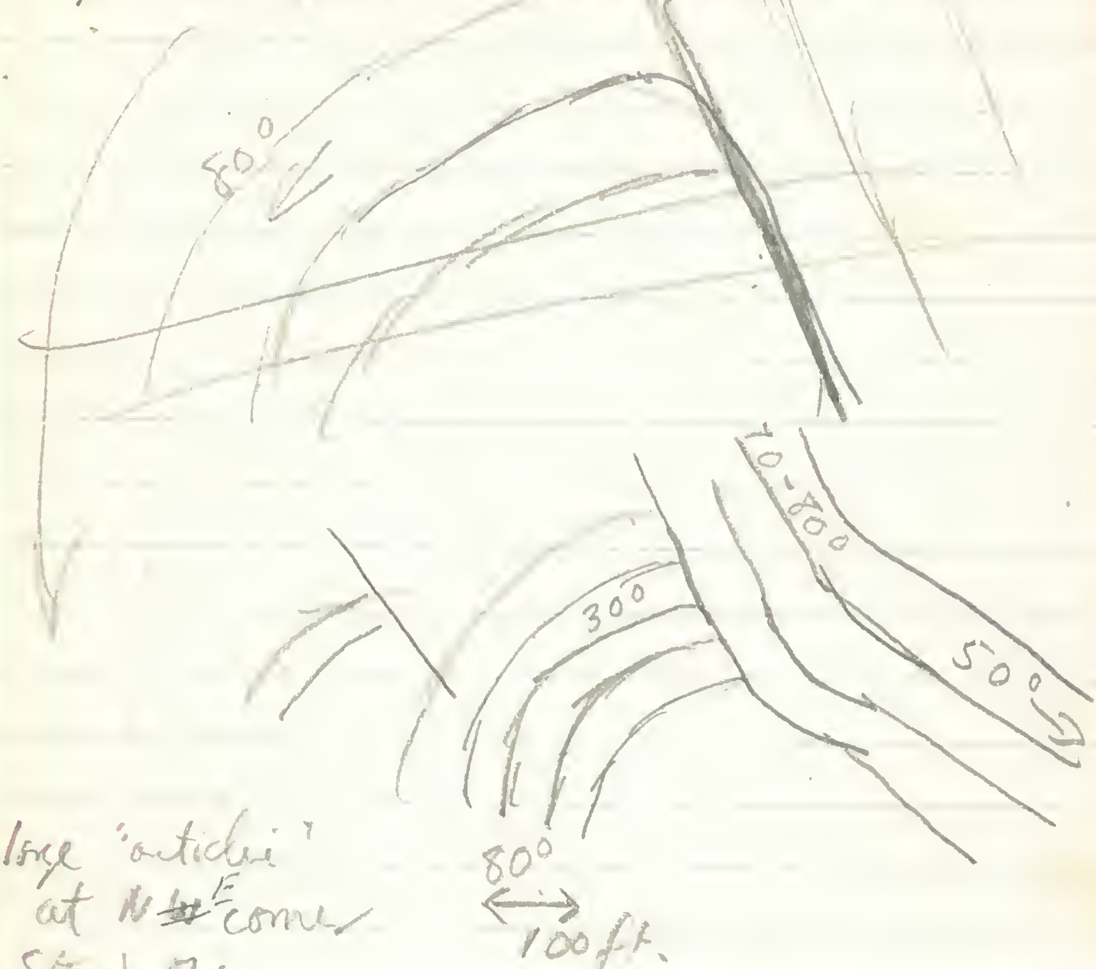
8 20 1 L

(also on 7199 L)

North of this Pt the definition between red & black rocks becomes hazy. Stump Mt is a mixture of both. It lacks the abundant pegmatite of the red rocks at the camp, but it has a great deal of varied & light grey & lavender bands of garnet rock - up to 50 ft thick are evident.

The sheet strike & dip on Stump Mt appears to be abt 14.5° N / 60° NE but is a ~~small~~ large deform anticline near

pt 418, at N-W corner



large 'anticline'
at ~~NW~~ NE corner
Stump Pt.

N.E. of the big snowdrift at 418
more pink rocks are evident in
dom. black gneiss, largely up
to Bird Head, but traces
are irregular.

On Stump Pt, ill defined

bands, lt grey, lt brown & dark grey rocks, between 50' & 300' thick, alternati

NE of 418 on 7199L

to a change of lithology, brown-black of funky ridge suddenly to mid grey (? garnetif q^tz f) at N. foot of slope. Strike accord w. Stamp Pt. slope. & mid grey of rocks fits w. first slope of Stamp Mt. across valley.

Pt 419 & its extension to NE links up w. 1961 mapping ? description disagreeable, This is merely a very large lens of grey rock ~~in~~ bounded by dark brown & black, crs. gr. pyrox - Q - F gneiss w. a few small feldspar

p'blast + w. dark brown concordant feldspar rich or dark blue-gry quartz-rich pegmatite, very like a gneissic charnockite now - much coarser than the typical "black" gneiss ~~Sm~~ / ~~Red lenses~~ Pink lens → 300 feet by 30 feet & grey lenses ⇒ 1000 feet × 100 feet occur in this gneissic, even-grained yellow-brown charnockite, ~~but~~ all str. 130° K? (as Stamp T(?)) dip vertical or steep to S.W. (prob. also steep N.E.

~~The black~~ of the gneissic charnockite ~~has the weathering of the~~ resembles the "black gneiss" in its resistance to weathering but in some ways it is more like some members of the red gneiss YET it has not thick abundant or continuous pegmatite & it is much more uniform than the red gneiss.

The change from black gneiss to

dark brown gneissic dioroite to
takes place abt. pt shown 54
on Photo 7199 L
Thus Stump Mt is grey gneiss
+ gneissic diorolite (+ black
gneiss + red gneiss?) - but
none of these division is absolute
all contain small quantities of
the others. -
The gneissic diorite on
ridge W. of Pt 419
is on strike w. BYRD HD
(see 1961)
A very good raised beach,
marked on photo, N of
Stump Mt. - sandy, may
be 40 ft above SL.
Lake behind this may
be 150' abv. SL, with
[illegible] [illegible] [illegible] [illegible]

Panorama photo (4 neg) of lake & raised beach from this ridge.

Pt 420 along the E side the ridge grey & black rocks
Str. // ridge / 50-60° E.
In small islands of NW colbeck black bandings in grey rock - str.
due N, T. / vertical.
Moraine is common around the lake also the raised beach above, but is not patterned or arranged in any way, & it is evidently not thick.

Pt 421 This ridge at farthest pt is still m.g. gneissic dioroschite as above, w. honeycomb weathering.
Red pegmatite, blue quartz v.crs black biotite + v crs red feldspar are common on the ridge → 5' thick, dykes, semi-concordant, continuing seen for several yards (? 30 ft!) though, swell & shrink in thickness. Cut across foltn in places.

then mylonite common.
In 200' across the str. fr.
pt 421, in towards Stu, E
the red-brown gneissic clonolite
passes irregularly into a gn.
qz. B-garnet - Q-F gneiss, pinkish
red brown, like Campbells,
in a migmatitic relationship w.
red B - G - Q-F pegmatite
+ biotite is widespread here.

Across the top of Stump Mt from
the Byrd Head ridge, there is a
confusing variety of rock, - paralleling
the views of the east mountainside
+ many are folly gneisses,
+ the foliation is locally much
deformed but the dom. trend is
160° M to 140° M

The large scale structural
picture revealed by the

planes of the rocks + by the trends on the ground, is that the black rocks, incl. the charnockites of Ufs I., form the core of an antiform, followed by the red rocks,

1 black rocks of core

2 Red rocks w. yellow-brown regular pegmatites.

3 Garnet-biotite rocks. grey + red - confused foliation, frilly, incompetent.

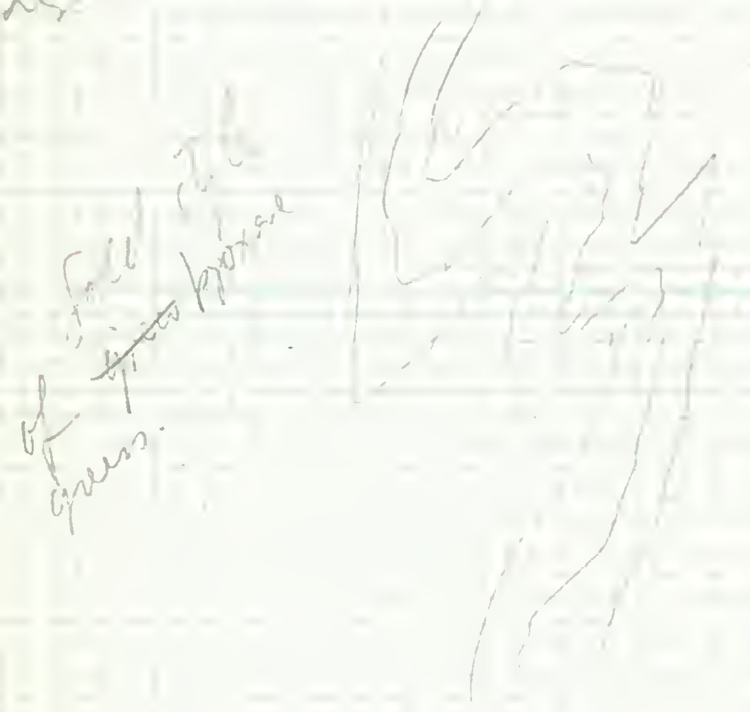
4 Gneissic charnockite of Bird Head.

5 Black gneiss & red granite of Norris I.

6 Frilly gneiss of Taylor

The Stump 17+ rocks are f.gr., m.gr., + cs. gr. some are P-Q-F, ~~some~~ many are B-G-Q-F, well foliated by ~~coa~~ finely banded (5mm)

Stringers ~~Gneiss~~ dk. min. softer
tightly deformed & foliation
trend varies widely NE +
NW



They are cut by B-G-Q-F
pegmatites & crs. gr. granitic
rocks, some straight sided
but ~~with~~ non continuous
(e.g. 20' × 4') others
irregular, all discordant +
concordant.

Finish [illegible] [illegible] the new beginning of [illegible] of [illegible] afternoon.

— the rocks on [illegible] ¼ m W. of Camp are = gneissy of Stinear's 1st [illegible] the "red rocks" — i.e. they are [illegible], + ~~but~~ they are well "foliated" but they contain [illegible] "yellow-brown" pegmatites.

10/1/64 — Dilly

The Bob said — [illegible] better than the beach. The heatwave continued to-day + we wore no pullovers, no gloves, had lunch in shirtsleeves — 'fantastic'.

Rose hurriedly at 0645 to get weather — gorgeous. No cloud, wind 5KTS but Katabatic still started at 0830 M.B.T. Met sched at 0700 — I can hear you but you can't hear me again. Ian spoke, said we would move to the Stillwell Hills to-morrow [redacted]

all being well. Breakfast back to traditional porridge + bacon, then off 0900 – NO DOGS – swift! 63
Round Stump Mt to-day running classification of gneisses gave good structural picture. Up on the mountain Bob was lolling about while I mapped with the binoculars – + he said "this is better than the beach!" It is fabulous – the rocks are warm but walking on snow is unpleasant because of the terrific glare – ~~o~~ we get very hot walking up snow basins. The whole aspect of the place, wet coarse snow, ice pinnacles underfoot is alpine + summer – alpine at that, rather than Antarctic. We had a spectacular ridge walk overlooking 2 lakes, one deep blue

the other bright yellow - funny
to see the sea ice still in place
& these lakes unfrozen. - then
slowly home across Stump flat
& into tent at 1800.

Inside the tent it was hot!
we sat around & had dinner in
our singlets - & Bob stripped
off & had a wash in the melt pool
nearby. If anyone had told
me Antarctica could be this warm
- rocks warm to the touch. - I would
have laughed at him.

The snow round the tent didn't
freeze again 'til 2100, & even
then we were out in ~~our~~ shirtsleeves
washing the dishes in the melt pool!

11/11/64. Weather.
Wind 2kts 160°
Vis 50 miles
Cloud 1/8 stratus ? 10,000ft, in east
Clear & Sunny.

[illegible] [illegible] to-day

15 - [illegible] to [illegible]

Pick up Thursday

~~7021~~ 2
7201 2 Alt

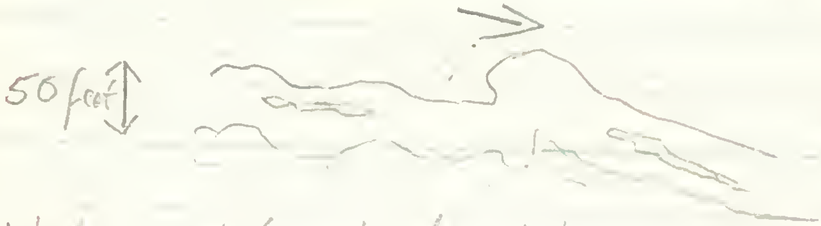
Pt 422

Here rocks are light yellow-brown to dark brown weathering, pink & red on some faces, w. honeycomb weathering is ?pyroxene - garnet - quartz - feldspar rock, massive, ~~&~~ sheared by thin seams mylonite (≥ 10 mm) & cut in various directions by lenses of quartz-rich blue-gray, feldspar pegmatite (1' x 4' e.g.).

No clear foliation discernible though various joint trends exist & vague felsic lenses.

From Tschaffert Pk - Pt 422A

At Cape Bruce is a distinct mass of light grey, well banded rocks, str. indicated in photo)



plastic-style folds plunge in dip

This mass is cut off on 2 sides from predominant red brown rocks - all sampled in 1961

Hayes Pk is red brown w. concordant cream lenses say ~~60~~ 100' x 20' & nearer red rocks are similar.

The "red granite" is at its most distinct on Norris I. At other places e.g. C. Bruce, Stamp Pt it is intimately intermingled w. other rocks. Also the light grey quartzite is quite distinct from the red granite

– again see C. Bruce & 1961 sample, & certainly should NOT be lumped with it. It is much more commonly associated with the black rocks (charnockitic granulite gneiss).

The rocks of Tschuffert Pk are similar to those near the camp, & to those on Stump Mt. They are cr. gr. & m. gr. variations of P-Q-F, G-P-Q-F, B-G-Q-F, & prob. B-P-G-Q-F – all possible combinations.

Foliation directions are most evident in lenses (2' × 6" ⇒ 5' × 2') of rocks rich in dark mineral, i.e. biotite or pyroxene, but the directions are varied, the lenses are deformed. A common direction is that of the peaks elongation – i.e. 60° NW/80° SE – ~~black~~ bands biotite rock w. economy

[illegible]

the [illegible] are cut by small scale [illegible] faulting / cross cutting [illegible].

but the rocks are for the most part massive, or containing two or more conflicting directions of faint foliation — by small lenses (10mm X 30mm) of co. gr. black material & stripes & lenses of f. g. & m. g. dark material

Dominant rock is an [illegible] light pinkish brown garnet - ?biotite or pyroxene - quartz - feldspar rock - w - pink feldspar, commonly co. gr. or much m. gr. w. stripes & small lens of gr material in various directions. 65280062

T 11 - the typical massive light pinkish brown rock. (also v. comm. on Stamp Mt.)

T 12 - Black gneiss from a lens, resembles folds phase in dip as above which is dominant

There is a very striking absence of good cirques at Taylor. There are one or two on the east side of Stamp Mt but the whole outcrop seems to

bear the impress of transecting glaciers — glaciers running from the ice cap through to the sea.

Where there are depressions in the common 200 ft platform it is thinly mantled by unsorted, unpatterned moraine though the deepest depressions are occupied by lakes. Watercourses connecting the lakes are poorly marked or completely absent. Drainage may be mainly by soaking through the moraine. ⊖ Flat parts of the platform carry very few moraine boulders, they have a clean-swept appearance — !! & so have some flat surfaces up to 1000 feet.

~~S. T~~ North ridge Tschaffer pk
skinny biotite rich

Perhaps the conflicting
foliations are caused by
~~folds~~ refolded folds. Presumably
Broadly an E-W running band
— it has been strung out in N-S
trending folds
— Although the marble rocks look
less competent they are in
fact more competent. The underlying
[illegible] rocks have accepted completely

67

the orientation represented by
the last deformation, ~~but~~
~~the [illegible]~~ if only the violently
deformed "less competent"
basic rocks still retain
traces of their orientation
before the last deformation!
Loc. Mass at SW pt. Stark
Mt. — dominant trend is 55°N/70SE
but biotite-bearing ~~dark~~ black
gneiss cut across this trend
here & there, though most of the
way they follow it. N.B. — these
could be "finely" deformed
metamorphosed <u>dykes</u>! — but some
of the bands are very thin (2"–6")
& ~~[illegible]~~ bars are separated by
bands of massive G-Q-F felsic
rock. Trending same way
— [illegible] [illegible] as [illegible]

The biotite band are cut by
xylocate(?) & q.c. ~~veins~~ here &
these [illegible] grade into
B-Q-F pegmatite seemingly
in the "cross-cut" direction
which is here 0°M
Concordant pegmatite also exist.
X-cut here is > 20 ft long,
x 1ft thick, follows
X-cutting biotite plane (prob. is
replaced(?) plane of it).

Monday 11th Jan — Dinner(?).

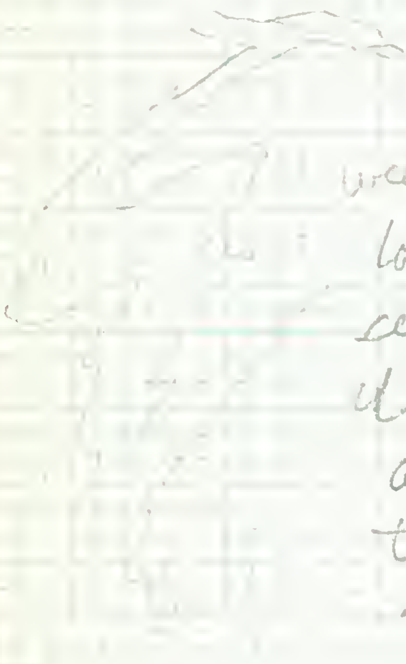
Rise w. difficulty 0545 weather
– perfect, no SW(?) wind – &
radio. No 'copter to-day, were
to measure instead, ~~Stan~~ learned
13 cases at Van Dorlk(?), & Pete &
Graham at Savage Ra., I on [illegible]
ops from ship.
Slow breakfast, then 0930 walk behind
Stump Mt to Eckhoff(?) PK above [illegible].
Henry Harestermann(?), Cook, Knuckey,
& others – 1957, 58, + 60, in paper in
summit cairn. Travel out a

biotite green band & found
intriguing pattern giving ~~too~~
confused foliation locally. –

– see album for
comment. Fantastic
weather continued but
low cloud came in from
sea & flowed slowly
up the Taylor Glacier
all afternoon, rising
to Hayes Pk & to cover
Cape Bruce, but leaving
us in sunshine so far
– top of cloud abt 800'.
Back to tent at 1500
& had a nap to make up for
lost sleep last few nights in
early start. Snow is completely
alpine hard & icy in morning
wet & sloppy in afternoon
Are some penguins, 50 or 50

in sight at the rookery, & a couple of
Nellies (Giant Petrels) & one ? Wilson's
Petrel (black back, white chest, white
bar above [illegible] wedge tail) follow-
us around. We have only seen
one or two snow petrels in the last
few days, the Bots have heard some
cackling away, but only in 2 localities
on the Mt. Marked absence of petrel
species. ? do they go inland
to avoid skuas, or do they just like
the near [illegible] [illegible] a [illegible] chemical?
in glissading. Then lunch again
at 2130 - & I was out for
over an hour in shirt trousers &
boots - no hat, no gloves! - &
gorgeously warm sitting on the rocks in
the sun. Peculiar clouds ~~low~~
low stratus have been lying over
the sea & in the glacier valleys &
hollows in the ice, advancing &
retreating, but we have been in bright
sun all day. Open water now
begins just off Kidson I., & a
large pool is opening ~~of~~ a few miles N of
UF's.

biotite gneiss band & found
intriguing pattern giving ~~too~~
confused foliation, [illegible] —



— see above for
comments Fantastic
weather continued but
low cloud came in from
sea & flowed slowly
up the Taylor Glacier
all afternoon, rising
to Hayes Pk & to cover
[illegible]

T 13 age det. sample
from camp site i 65280115.

Bob's 22nd birthday to-day. He cooked a 1st class dinner potatoes, "Bob's bread" & chocolate biscuits, & a couple of pints of tea – in fact.
After dinner we walked over the nearby rock & collected 8 different mosses & lichens for Roy Filson. They are really blooming in profusion now & when you look for them, they are everywhere, coloured ones & grey ones & bright green moss & algae in the melt streams. Had a lesson in glissading. Then hoard again at 2130 – & I was out for over an hour in shirt trousers & boots – no hat, no gloves! – & gorgeously warm sitting on the rocks in the sun. Peculiar clouds ~~lie~~ low stratus have been lying over the sea & in the glacier valleys & hollows in the ice, advancing & retreating, but we have been in bright sun all day. Open water now begins just off Kidson I., & a large pool is opening ~~of~~ a few miles N of VF !

23

Alpha
Bravo
Charlie
Delta
Echo
Foxtrot
GOLF
HOTEL
Indian
JULIET
Kilo
LIMA
Mike
November
Oscar

Papa
Quebec
ROMEO
Sierra
~~Tod~~ Tango
Uniform
Victor
WHISKY
X-ray
YANKEE
Zulu

A	· —	1	· — — — —
B	— · · ·	2	· · — — —
C	— · — ·	3	· · · — —
D	— · ·	4	· · · · —
E	·	5	· · · · ·
F	· · — ·	6	— · · · ·
G	— — ·	7	— — · · ·
H	· · · ·	8	— — — · ·
I	· ·	9	— — — — ·
J	· — — —	0	— — — — —
K	— · —		
L	· — · ·		
M	— —		
N	— ·		
O	— — —		
P	· — — ·		
Q	— — · —		
R	· — ·		
S	· · ·		
T	—		
U	· · —		
V	· · · —		
W	· — —		
X	— · · —		
Y	— · — —		
Z	— — · ·		

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0069